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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/757,734	01/13/2004	Paul D. Panetta	50005-107/BAT-060	4882
32215	7590	10/18/2005		
KLARQUIST SPARKMAN, LLP 121 SW SALMON STREET, SUITE 1600 ONE WORLD TRADE CENTER PORTLAND, OR 97204			EXAMINER LARKIN, DANIEL SEAN	
			ART UNIT	PAPER NUMBER
			2856	

DATE MAILED: 10/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/757,734		PANETTA ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Daniel S. Larkin		2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on 28 July 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17-25 is/are allowed.
- 6) ☒ Claim(s) 1, 12 and 14 is/are rejected.
- 7) ☐ Claim(s) 2-11, 13, 15 and 16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### DETAILED ACTION

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 12, 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 2004/0090625 (Fischer et al.) in view of US 6,796,195 (Povey et al.).

With respect to the limitations of claim 1, the reference to Fischer et al. discloses a method of monitoring a process by responding to fluctuations or changes in particle/cell properties in a fluid from a fermentation process, wherein the particles/cells may include organic particles/cells which arise from organisms. The reference further discloses that the monitoring process is accomplished by a probe that utilizes ultrasound. The reference to Fischer et al. fails to disclose using backscattering of the ultrasound from the cells.

The reference to Povey et al. discloses an apparatus for determining particle size, concentration, and size distribution for particles in a fluid by determining the characteristics of an acoustic speckle/backscattered signal of the particles and relating these characteristics to the size and concentration characteristics of the particles. Modifying the reference to Fischer et al. to utilize an ultrasound backscattered signal would have been obvious to one of ordinary skill in the art because ultrasound has significant advantages over other technologies, when the particle streams are optically opaque or where particle density is high.

With respect to the limitations of claim 12, the reference to Fischer et al. discloses a method of monitoring a process by responding to fluctuations or changes in particle/cell properties in a fluid from a fermentation process, wherein the particles/cells may include organic particles/cells which arise from organisms. The reference further discloses that the monitoring process is accomplished by a probe that utilizes ultrasound. The reference to Fischer et al. fails to disclose using backscattering of the ultrasound from the cells or a transducer in contact with the fluid.

The reference to Povey et al. discloses an apparatus for determining particle size, concentration, and size distribution for particles in a fluid by determining the characteristics of an acoustic speckle/backscattered signal of the particles and relating these characteristics to the size and concentration characteristics of the particles. Additionally, the reference to Povey et al. discloses contacting the particular medium under test with the ultrasonic transducer. Modifying the reference to Fischer et al. to utilize an ultrasound backscattered signal would have been obvious to one of ordinary skill in the art because ultrasound has significant advantages over other technologies, when the particle streams are optically opaque or where particle density is high.

With respect to the limitation of claim 14, the reference to Fischer et al. fails to disclose determining the amplitude of the backscattered signals in a predetermined time gate. The reference to Povey et al. discloses that the backscattered signal is acquired as an amplitude value as a function of time. Specifically, one example, as shown in Figure 6, shows a plot of amplitude versus time output signals that have been gated or limited. Gating the signal would have been obvious to one of ordinary skill in the art as

a means of focusing the signal such that the most concentrated results can be evaluated.

### ***Response to Arguments***

3. Applicant's arguments with respect to claims 1 and 8 have been considered but are moot in view of the new ground(s) of rejection.

### ***Allowable Subject Matter***

4. Claims 2-11, 13, 15, and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. Claims 17-25 are allowed.

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The prior art to US 6,874,356 (Kornfeldt et al.) discloses a method and device for monitoring and controlling a fermentation process by means of acoustic spectroscopy.

The prior art to US 4,848,139 (Blake-Coleman et al.) discloses an apparatus for determining the concentration of bacteria in a fermentation chamber utilizing a vibratory element.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel S. Larkin whose telephone number is 571-272-2198. The examiner can normally be reached on 8:00 AM - 5:00 PM Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on 571-272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2856

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Daniel Larkin  
AU 2856  
17 October 2005



DANIEL S. LARKIN  
PRIMARY EXAMINER